What is claimed is:

1. A method for testing with a torpedo and a countermeasure threat emulation system, comprising:

   selectively programming said countermeasure threat emulation system for producing at least one of a plurality of foreign countermeasures using a database of foreign countermeasures; and

   launching said torpedo for interactive operation with said countermeasure threat emulation system.

2. The method of claim 1 further comprising analyzing sounds produced by said torpedo with a neural network within said countermeasure threat emulation system.

3. The method of claim 2 further comprising providing an identification of said torpedo using said neural network.

4. The method of claim 3 further comprising responding to said torpedo based on said identification.

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5.   The method of claim 4 wherein said responding further comprises choosing and producing one of said plurality of foreign countermeasures corresponding to said identification.

6.   The method of claim 1 further comprising operating said countermeasure threat emulation system in duplex mode by simultaneously sending and receiving acoustic signals.

7.   The method of claim 1 further comprising using a digital signal processing unit within said countermeasure threat emulation system for selectively producing a wideband acoustic signal or a band limited acoustic signal.

8.   A programmable countermeasure threat emulation system, comprising:

    a tubular housing suitable for launching from a submarine;

    a power supply within said tubular housing, said power
        supply including controls for selectively operating
        remotely or connected to an external power source;

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a hovering system for said tubular housing for controlling

mobility of said tubular housing within water;

a transmitter for transmitting acoustic signals;

a digital signal processing unit for producing waveforms to

be transmitted by said transmitter; and

a central processing unit for storing digital information

related one or more countermeasure threats and

supplying said digital information to said digital

signal processing unit.

9.   The system of claim 8 further comprising a receiver

hydrophone.

10.   The system of claim 9 further comprising a neural network

analyzing signals from said receiver hydrophone.

11.   The system of claim 8 further comprising a plurality of

field programmable gate arrays for said digital signal processing

unit.

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12. The system of claim 8 further comprising a plurality of digital signal processing integrated circuits for said digital signal processing unit.

13. The system of claim 12 further comprising a signal conditioner operable for converting a stream of digital signals into analog signal for broadcast by said transmitter.

14. The system of claim 8 further comprising a database stored in a computer external to said housing, said database containing a plurality of foreign countermeasure threats.

15. A method for emulating a countermeasure threat, said method comprising:

maintaining a database having a plurality of foreign countermeasure threats;

downloading data for at least one of said plurality of foreign countermeasure threats into a computer within a housing;

launching said housing for underwater operation; and

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transmitting an emulation of at least one of said plurality

of foreign countermeasure threats into water through an

acoustic transducer.

16. The method of claim 15 further comprising processing said

data utilizing one or more digital signal processing integrated

circuits.

17. The method of claim 16 further comprising providing a

plurality of field programmable gate arrays for reprogramming

said digital signal processing circuits.

18. The method of claim 15 further·comprising utilizing a

receiver hydrophone in said countermeasure threat emulator for

receiving acoustic signals produced by an incoming torpedo.

19. The method of claim 18 further comprising identifying said

incoming torpedo from said received acoustic signals.

20. The method of claim 19 further comprising utilizing a neural network within said countermeasure threat emulator for said identifying.

21. The method of claim 19 further comprising responding to said incoming threat based on said identification and a preprogrammed response for said identification.

22. The method of claim 21 further comprising simultaneously broadcasting acoustic signals and receiving acoustic signals.